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10/654,954	09/05/2003	Meng-Hong Chen	CHEN3547/EM	7932

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EXAMINER

ZEWDU, MELESS NMN

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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11/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/654,954

Applicant(s)

CHEN ET AL.

Examiner

Meless N, Zewdu

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This action is in response to the communication filed on 9/13/07.
2. Claims 1-44 are pending in this action.
3. This action is final.

Response to Arguments

Applicant's arguments filed 9/13/07 have been fully considered but they are not persuasive. Arguments presented by applicant and corresponding responses by examiner are presented below.

Argument I: with regard to claims 1 and 23, applicant argues by saying, Liu (US 2004/0190467 A1) fails to disclose or suggest, "**embedding schedule information including time slot information and association ID sets in a beacon frame and periodically entering an active state to receive the beacon frame**, as recited in claims 1 and 23.

Response I: examiner respectfully disagrees with the argument. First, there is no mention of **embedding** schedule information ----, in claims 1 and 23. Therefore, the argument could be considered as one based on a feature not so claimed. To the extent of transmitting/providing schedule information for the purpose of saving battery power (see at least the abstract), Liu describes that an access point originates and transmits a beacon and SIV (schedule information vector) frame protocol of scheduled **wake-up**

time to stations, including association ID sets in a beacon frame (see paragraphs 0026-27; claim 20). Furthermore, Liu discloses a station periodically enters an active state (wake-up period) to listen to a beacon (paragraphs 0022 and 0084). Moreover, the time slot information (channel information) is apparent from the scheduled wake-up time (see abstract; paragraphs 0044; 0079). Also, it is to be noted that schedule is a function of relative time.

Argument II: with regard to claims 8 and 30, applicant asserts that Liu fails to disclose or suggest **"having the point coordinator transmit the schedule information after transmitting the beacon frame, and periodically entering the active state to receive the beacon and schedule frames in a distributed-manner, as recited in claims 8 and 30."**

Response II: examiner respectfully disagrees with the argument. As an initial matter, applicant contradicts the later argument by stating/concluding, "thereby eliminating the need to separately transmit schedule information. But, the body of the later argument includes the phrase, **"having the point coordinator transmit the schedule information after transmitting the beacon frame"**, hence, transmitting schedule information separately. Nonetheless, Liu discloses that the SIV frame (schedule frame) from the AP (point coordinator) could be transmitted either before or after a beacon (see paragraph 28). Furthermore, while the examiner considers Liu's WLAN (paragraphs 0046, 0065) as "distributed-manner mode network", the point coordinator is the AP (access point) that transmits/provides the schedule information to stations and stations (at least one station) periodically enters an active state to receive

the beacon and schedule frames/information, as described in claim 20 and paragraph 0026. Therefore, examiner does not find the argument persuasive.

Argument III: with regard to claims 15-22 and 37-44, applicant asserts that Yildiz et al. (US 6,674,738 B1) and Liu patents fail to disclose or suggest --- transmitting a schedule information frame after a beacon frame and waking up a station based on association information in the schedule information frame.

Response III: examiner respectfully disagrees with the argument. In that, Liu discloses that --- a schedule information frame (SIV) could be transmitted either after or before a beacon frame (see paragraph 0028) and waking up a station based on association information in the schedule information frame (see at least claim 20).

Argument IV: with regard to claims 15-22 and 37-44, applicant argues by saying neither the Liu nor the Yildiz patent discloses or suggests providing a system for power-saving in a wireless local area network, as claimed, so that a control station transmits the schedule information frame after the beacon frame followed by a predetermined time period, Wherein the schedule information includes a duration field set to a specific time duration, a 1 field address set to a particular multicast address, and a frame body having a plurality of sets of association identification and time slot information.

Response IV: examiner respectfully disagrees with the argument. In that, Liu discloses a system for power-saving in a wireless local area network (see paragraphs 0046, 0065), so that a control station transmits the schedule information frame after the beacon frame followed by a predetermined time period (see paragraph 0027-0028), Wherein the schedule information includes a duration field set to a specific time duration

(see paragraphs 0044-0045). Note the relative time shifts, and finally, a frame body having a plurality of sets of association identification (see paragraph 0046) and time slot (time) information (see paragraphs 0044-0045). What is missed from Liu's disclosure is "a 1 field address set to a particular multicast address", which is taught by (see col. 12, lines 13-19). Arguments not responded to are those which are not clearly related to the claims, otherwise arguments made based on the specification.

Claim Objections

Claim 1 is objected to because of the following informalities: "**data**" at the end of claim 1 should be reading as "the data". Appropriate correction is required.

Claim 23 is objected to because of the following informalities: "**data**" at the end of claim 23 should be reading as "the data". Appropriate correction is required.

Claims 1, 8, 9, 15, 23, 24, 37 are objected to because of the following informalities: in some of the lines in these claims, there is no spacing between words.. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-14 and 23-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu et al. (Liu) (US 2004/0190467 A1). For examination purposes, claim 23 is considered first.

As per claim 23: Liu discloses a system for power-saving in a wireless local area network (see title), comprising:

plural stations (see fig. 1), each having an active state and a power-saving state, transmitting and receiving data through the radio media directly to and from a point coordinator (AP) (see paragraphs 0026-0027), and periodically entering its active state to receive a beacon frame (see paragraphs 0090 and 0098); and the point coordinator which periodically transmits the beacon frame with a schedule information including plural sets of association identification and time slot information (see abstract; paragraphs 0027, 0030), the association identification indicating that there is duration for a corresponding station to receive/transmit data (see abstract; paragraphs 0027, 0031), the time slot information specifying the time that the corresponding station is in

the active state for receiving/transmitting data (see abstract; paragraphs 0026, 0043);

wherein, a specific station enters its active state to receive/transmit data in the time specified by the time slot information in the beacon frame (see abstract; paragraphs 0044-0045), when there is a duration for the specific station to receive/transmit data (see paragraphs 0046, 0044-0045).

As per claim 24: Liu discloses the system of claim 23, including a system, wherein each station enters its power-saving state after receiving the beacon frame (see paragraph 0068).

As per claim 25: Liu discloses the system of claim 23, including a system, wherein each station stays in its power-saving state if there is no corresponding association identification in the schedule information (see abstract; paragraphs 0030-0031).

As per claim 26: Liu discloses the system of claim 23, including a system, wherein each specific station re-enters its power-saving state after the data transmission (see abstract; paragraphs 0085, 0087).

As per claim 27: Liu discloses the system of claim 23, including a system, wherein the time slot information is a time stamp (see abstract; figs. 6B-6D). A periodic time slot/frame received must have been time-stamped.

As per claim 28: Liu discloses the system of claim 23, including a system, wherein the time slot information is a time offset (see paragraphs 0022-0023, 0027).

As per claim 29: Liu discloses the system claim 23, including a system, wherein the schedule information is scheduled according to a schedule algorithm for meeting QoS requirements (see paragraph 0023, 0050, 0057, 0063).

As per claim 30: the features of claim 30 are similar to the features of claim 23 except transmitting a schedule information after transmitting the beacon frame, which is disclosed by Liu (see 0013, 0028).

As per claim 31: the feature of claim 31 is similar to the feature of claim 24. hence, claim 31 is rejected on the same ground as claim 24..

As per claim 32: the feature of claim 32 is similar to the feature of claim 25. Hence, claim 32 is rejected on the same ground as claim 25.

As per claim 33: the feature of claim 33 is similar to the feature of claim 26. Hence, claim 33 is rejected on the same ground as claim 26.

As per claim 34: the feature of claim 34 is similar to the feature of claim 27. Hence, claim 34 is rejected on the same ground as claim 27.

As per claim 35: the feature of claim 35 is similar to the feature of claim 28. Hence, claim 35 is rejected on the same ground as claim 28.

As per claim 36: the feature of claim 36 is similar to the feature of claim 29. Hence, claim 36 is rejected on the same ground as claim 29.

As per claim 1: the features of claim 1 are similar to the features of claim 23, except claim 1 is directed to a method the steps of which are the system of claim 23 is intended/required to perform. Hence, since the system of claim 23 is disclosed and the steps of claim 1 are required by the system of claim 23, claim 1 is rejected on the same ground as claim 23.

As per claim 2: the feature of claim 2 is similar to the feature of claim 24. Hence, claim 2 is rejected on the same ground as claim 24.

As per claim 3: the feature of claim 3 is similar to the feature of claim 25. Hence, claim 3 is rejected on the same ground as claim 25.

As per claim 4: the feature of claim 4 is similar to the feature of claim 26. Hence, claim 4 is rejected on the same ground as claim 26.

As per claim 5: the feature of claim 5 is similar to the feature of claim 27. Hence, claim 5 is rejected on the same ground as claim 27

As per claim 6: the feature of claim 6 is similar to the feature of claim 28. Hence, claim 6 is rejected on the same ground as claim 28.

As per claim 7: the feature of claim 7 is similar to the feature of claim 29. Hence, claim 7 is rejected on the same ground as claim 29.

As per claim 8: the features of claim 8 are similar to the features of claim , except claim 8 is directed to a method the steps of which are the system of claim 23 is intended/required to perform. Hence, since the system of claim 23 is disclosed and the steps of the method are required by the system, claim 1 is rejected on the same ground as claim 23.

As per claim 9: the feature of claim 9 is similar to the feature of claim 24. Hence, claim 9 is rejected on the same ground as claim 24.

As per claim 10: the feature of claim 10 is similar to the feature of claim 25. Hence, claim 10 is rejected on the same ground as claim 25.

As per claim 11: the feature of claim 11 is similar to the feature of claim 26. Hence, claim 11 is rejected on the same ground as claim 26.

As per claim 12: the feature of claim 12 is similar to the feature of claim 27. Hence, claim 12 is rejected on the same ground as claim 27.

As per claim 13: the feature of claim 13 is similar to the feature of claim 28. Hence, claim 13 is rejected on the same ground as claim 28.

As per claim 14: the feature of claim 14 is similar to the feature of claim 29. Hence, claim 14 is rejected on the same ground as claim 29.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu in view of Yildiz et al. (Yildiz) (US 6,674,738 B1). For examination purposes, claim 37 is considered first.

As per claim 37: most of the features of claim 37 are similar to the features of claim 23 and are rejected on the same ground as claim 23. Liu also discloses one of the difference features directed to – a frame body having a plurality of sets of association identifications and time slot information (see paragraphs 0037-0038, 0071, 0075-0076) and a multicast schedule information (see paragraph 0068). The SIV in the WLAN frame includes identification and time information. But, Liu does not explicitly teach

whether or not an address 1 field, is set to the above cited multicast address, as claimed by applicant. However, Yilditz teaches about a wireless LAN (WLAN) network wherein a station uses the contents of the "address 1" field to perform the address matching of target receiving stations (see col. 12, lines 13-19). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the teaching of Liu with that of Yilditz for the advantage of performing address matching of target stations (see col. 12, lines 13-19).

As per claim 38: Liu teaches a system, wherein each first station enters its power-saving state after receiving the beacon frame and the schedule information frame (see paragraphs 0046, 0068).

As per claim 39: Liu teaches a system, wherein each first station stays in its power-saving state if there is no corresponding association identification in the schedule information frame (see abstract; paragraphs 0030-0031).

As per claim 40: Liu teaches a system, wherein each specific first station re-enters its power-saving state after the data transmission (see abstract; paragraphs 0085, 0087).

As per claim 41: Liu teaches a system, wherein the time slot information is a time stamp (see abstract; figs. 6B-6D). A periodic time slot/frame received must have been time-stamped.

As per claim 42: Liu teaches a system, wherein the time slot information is a time offset (see paragraphs 0022-0023, 0027).

As per claim 43: Liu teaches a system, wherein the predetermined time period is a PIFS free media period defined in the IEEE 802.11 specification (see paragraph 0036).

As per claim 44: Liu teaches a system, wherein the schedule information is scheduled according to a schedule algorithm for meeting QoS requirements (see paragraph 0023, 0050, 0057, 0063).

As per claim 15: the features of claim 15 are similar to the features of claim 37, except claim 15 is directed to a method the steps of which are the system of claim 37 is required/intended to perform. Hence, since the system is obviated and the method is required by the system, claim 15 is rejected on the same ground and motivation as claim 37.

As per claim 16: the feature of claim 16 is similar to the feature of claim 38. Hence, claim 16 is rejected on the same ground and motivation as claim 38.

As per claim 17: the feature of claim 17 is similar to the feature of claim 39. Hence, claim 17 is rejected on the same ground and motivation as claim 39.

As per claim 18: the feature of claim 18 is similar to the feature of claim 40. Hence, claim 18 is rejected on the same ground and motivation as claim 40.

As per claim 19: the feature of claim 19 is similar to the feature of claim 41. Hence, claim 19 is rejected on the same ground and motivation a claim 41.

As per claim 20: the feature of claim 20 is similar to the feature of claim 42. Hence, claim 20 is rejected on the same ground and motivation as claim 42.

As per claim 21: the feature of claim 21 is similar to the feature of claim 43. Hence, claim 21 is rejected on the same ground and motivation as claim 43.

As per claim 22: the feature of claim 22 is similar to the feature of claim 44. Hence, claim 22 is rejected on the same ground and motivation as claim 44.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meless N. Zewdu whose telephone number is (571) 272-7873. The examiner can normally be reached on 8:30 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Appiah Charles can be reached on (571) 272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

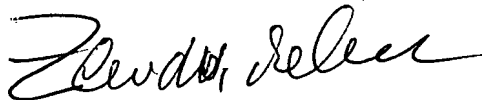
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Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Meless Zewdu

A handwritten signature in black ink, appearing to read 'Zewdu, Meless', written in a cursive style.

Patent examiner

13 November 2007.